by copies: nor is the uncertainty of copies being accurately taken greater, in any case than in that of copied numbers. It is consequently useful to contrive new and easy methods for computing new tables, or for examining those we already have; and it is particularly useful to contrive methods by which any part of a table may be verified, independently of the rest; for by examining parts taken at random, we may, in some cases, acquire a moral certainty respecting the accuracy of the whole.

Among the various methods of computing logarithms, none, our author says, possesses the advantage of forming them with tolerable ease, independently of each other, by means of a few easy bases. This desideratum, he trusts, the method described by him will supply; being very easy of application, as it requires no division, multiplication, or extraction of roots, and has its relative advantages highly increased by increasing the number of decimal places to which the computation is carried.

The chief part of the work, according to the method laid down by Mr. Manning, consists in merely setting down a number, under itself, removed one or more places to the right, and subtracting; then repeating this operation. This method, consequently, is very little liable to error; and may be performed, after a few minutes instruction, by any one who is able to subtract. Besides, from the commodious situation of the figures, the work may be revised with great rapidity. It is as easy for large numbers as for small ones; and, on an average, about 27 subtractions will furnish a logarithm accurately to ten places of decimals.

A similar method, by addition only, may, Mr. Manning says, in some cases, be used with advantage; and various artifices may be occasionally employed to shorten the computation, both in the method by subtraction and in that by addition: the two methods may also be sometimes advantageously combined together. It must, however, be observed, that the method by subtraction has many advantages over that by addition; particularly as from its being more simple, and more completely mechanical, it may be confided to the most unskilful persons without much danger of error.

Various examples of our author's mode of computation and rules for conducting it are given, for which we must necessarily refer to the paper itself.

Description of the Mineral Basin in the Counties of Monmouth, Glamorgan, Brecon, Carmarthen, and Pembroke. By Mr. Edward Martin. *Communicated by the Right Hon.* C. F. Greville, *F.R.S.* Read May 22, 1806. [*Phil. Trans.* 1806, *p.* 342.]

The basin, which is here described by Mr. Martin, is delineated in a map annexed to the paper; it is formed of limestone, and contains all the strata of coal and iron ore in South Wales: it is upwards of 100 miles in length; and its average breadth in the counties of Monmouth, Glamorgan, Carmarthen, and part of Brecon, is

from 18 to 20 miles; but in Pembrokeshire its breadth is only from 3 to 5 miles.

On the northern half of the basin the strata rise gradually northward; on the south side they rise southward, except at the east end, where they rise eastward. The deepest part of the basin is between Neath, in Glamorganshire, and Llanelly in Carmarthenshire, where the depth of the principal strata of coal and iron ore is from 600 to 700 fathoms; whereas in Pembrokeshire, none of the strata lie above 80 or 100 fathoms deep.

The strata of coal at the east end of the basin and on the north side, are chiefly of a cokeing quality; but they alter, towards St. Bride's Bay, to what is called stone coal: on the south side of the basin the strata are principally of a bituminous or binding quality.

In this mineral basin there are 12 veins, or strata of coal, from 3 to 9 feet thick; and 11 others, from 18 inches to 3 feet, making in all 95 feet, besides a number of smaller veins, from 6 to 18 inches in thickness.

There are in these strata many faults or irregularities, by which the due range of the strata is thrown out of course. These faults are not confined to the edges of the strata, but run through the interior of the basin generally, in a north and south direction, and often throw the whole of the strata, for hundreds of acres together, 40, 60, 80, or 100 fathoms up or down. There is, however, seldom any superficial appearance that indicates a disjunction; for the greatest faults frequently lie under even surfaces.

A very considerable fault is observable at Crib-bath, where the beds, or strata of the limestone, stand erect. Another fault of great magnitude lies between Ystradvellte and Penderryn, where all the strata, and the north side of the basin, are moved many hundred yards southward.

The limestone appears at the surface, all along the boundary line, in the counties of Monmouth, Glamorgan, Carmarthen, and Brecon; and no doubt can be entertained that it ranges from Newton, across Swansea Bay, to the Mumbles, and from Canmaddock Hill, across Carmarthen Bay, to Langam Tenby. In Pembrokeshire it appears at the surface only in some particular spots; yet it certainly forms an under-ground connexion from one spot to the other.

Glamorganshire possesses by far the greatest portion of coal and iron ore; Monmouthshire is the next in point of quantity; then Carmarthenshire; then Pembrokeshire; and lastly Brecknockshire, which possesses the least.

Observations on the Permanency of the Variation of the Compass at Jamaica. In a Letter from Mr. James Robertson *to the Right Hon. Sir* Joseph Banks, *K.B. P.R.S. &c.* Read June 12, 1806. [*Phil. Trans.* 1806, *p.* 348.]

The object of Mr. Robertson, who resided in Jamaica, as a King's Surveyor of Land, upwards of twenty years, is to show that no